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Remarks

Claims 1-22 are pending in the application.

Claims 5-9 and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For reasons set forth below, Applicant submits that independent claims 1 and 10 from which claims 5-9 and 14-18 depend, are patentable under 35 U.S.C. 102. Therefore, these claims 5-9 and 14-18 are also patentable in their present dependent form.

Claims 1-4, 10-13 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US Patent No.: 5,903,370).

Claims 1-3, 10-12 and 19-20 have been amended to clarify Applicants' invention and antecedent bases. No new matter has been added.

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Entry of this Amendment is proper under 37 CFR § 1.116 since the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the previous Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; or (e) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of the amendment is thus respectfully requested.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code

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or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewriting to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

Objections

Claims 5-9 and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For reasons set forth below, Applicant submits that independent claims 1 and 10 from which claims 5-9 and 14-18 depend, are patentable under 35 U.S.C. 102. Therefore, claims 5-9 and 14-18 are also patentable in their present dependent form.

Rejection Under 35 U.S.C. 102

Claims 1-4, 10-13, and 19-22

Claims 1-4, 10-13, and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson. Applicant respectfully traverses the rejection.

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Claims 1-3, 10-12 and 19-20 have been amended to clarify Applicants' invention and antecedent bases. No new matter has been added.

Specifically, independent claims 1, 10 and 19 have been amended to further clarify that the original phrase: "the connections are via a protection switch", refers to each of the connections to and from each optical network unit (ONU), i.e., the connections between each optical network unit, between the optical line terminal and the respective first and last ONUs, are done via the protection switch. These claims have also been amended to clarify that when the respective ONU with the detected loss of signal is switched out of the series, the continuity of the ring topology is maintained among the remaining of the plurality of ONUs.

Furthermore, dependent claims 2-3, 11-12 and 20 have been amended to clarify various antecedent bases.

Since the amended language merely clarifies the original language, and does not change the scope of the respective claims, Applicants submit that no new search would be required for any of these amended claims.

In responding to Applicant's arguments filed 1/12/07 (page 4 of the current Office Action), Examiner considered nodes A-D in Johnson's optical domain restoration system 50 (Figs. 5A-B) as analogous to the optical network units (ONUs) in Applicant's invention. Applicants respectfully disagree.

Specifically, Applicant's invention is directed towards an optical access network that includes a number of ONUs. As understood by one skilled in the art, an optical access network provides optical connections between a public network and end-users (e.g., Applicant's specification, p. 7-8), while an ONU is typically provided near an end-user for interface between the user's equipment and the network.

Johnson clearly does not teach any optical access network or ONUs as one skilled in the art would have understood. Instead, Johnson's Figs. 5A-B are directed towards an optical domain restoration (ODR) system for a network with nodes or gateways A-D in a ring configuration, in which bi-directional traffic is transported respectively in an outside ring 47 and an inside optical ring 48 (e.g., col. 6, lines 34-43; col. 7, lines 1-32).

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The nodes or gateways A-D in Johnson are clearly not ONUs because nodes A-D do not provide any interface between end-users and the public network. Thus, Applicant submits that Johnson does not teach at least the ONUs provided in Applicant's invention.

Assuming, arguendo, that the nodes A-D can be considered analogous to the ONUs in Applicant's invention, Johnson's Figs. 5A-B still do not teach at least the feature of: "wherein each of the connections to and from each optical network unit is via a protection switch".

As shown in Johnson's Figs. 5A-B, each node (A-D) includes an optical restoration switch (51-54) as part of the node itself. Furthermore, as clearly shown in Figs. 5A-B and Fig. 6, each node is connected to each other via two different lightwave terminal elements (LTEs) 45, one LTE being provided at each end of a node. As such, Johnson's nodes A-D are not connected to each other via a protection switch, as recited in Applicant's claims 1, 10 or 19. In addition, Figs. 5A-B do not show any LTE connected to a node via a protection switch, as arranged in Applicant's invention. Thus, unlike Applicant's claims 1, 10 or 19, Johnson does not teach "wherein each of the connections to and from each optical network unit is via a protection switch".

Furthermore, Johnson does not teach, in case of detection of a loss of signal from a respective ONU, to "switch the respective optical network unit out of the series such that continuity of the ring topology is maintained among remaining of the plurality of optical network units," as provided in Applicant's invention.

Instead, Johnson teaches that (col. 7, lines 8-18), when there is a loss of signal due to a fiber cut between two nodes (e.g., fiber cut 59 between nodes B and C), east-bound traffic on outside ring 47 intended for node C will be re-routed by optical switch 52 at node B to be sent in the opposite direction on the inside ring 48. Similarly, west-bound traffic on outside ring 47 intended for node B will be re-routed by optical switch 53 at node C to be sent in the opposite direction on the inside ring 48. Details of the re-routing are also given in connection with Fig. 6, e.g., col. 7, line 62 to col. 9, line 6.

There is simply no teaching in Figs. 5A-B, Fig. 6 or the associated discussions that a node (e.g., B or C) be switched out of the series while maintaining the continuity of the ring topology among remaining of the nodes, as provided in Applicant's invention.

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Instead, Johnson's protection switch configuration would result in all nodes A, B, C and D being still maintained within the series (e.g., B-A-D-C). At the same time, due to the fiber cut 59 between nodes B and C, nodes A, B, C and D are no longer connected as a ring configuration (though they are still connected in series), i.e., the continuity of the ring topology is not maintained.

As such, not only does Johnson not teach, in case of a loss of signal, Applicant's features of: "to switch the respective optical network unit out of the series such that continuity of the ring topology is maintained among remaining of the plurality of optical network units," Johnson's configuration actually results in the exact opposite scenario of maintaining all nodes in the series to provide continuity in traffic, despite a discontinuity of the ring topology due to the fiber cut.

Therefore, Applicant submits that independent claims 1, 10 and 19 are not anticipated by Johnson, and thus, are patentable under 35 U.S.C. 102.

Since all of the dependent claims that depend from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable over Johnson under 35 U.S.C. 102.

As such, Applicants request that the rejection be withdrawn.

Allowable Subject Matter

Applicant thanks Examiner for indicating that claims 5-9 and 14-18 are allowable if rewritten in independent form. However, for reasons set forth above, Applicant submits that these claims, which depend from claims 1 and 10 respectively, are also allowable in their current dependent form under 35 U.S.C. 102.

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It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

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